

SEQUENCE LISTING

<110> Suntory Limited

<120> Process for producing peptides using a
 helper peptide

<130> F962

<150> JP 10-032272

<151> 1998-01-30

<160> 24

<210> 1

<211> 4

<212> PRT

<213> Artificial Sequence

<220>

<223> Amino acid sequence adjacent to a site cleaved by
 enterokinase

<400> 1

Asp Asp Asp Lys

1

<210> 2

<211> 4

<212> PRT

<213> Artificial Sequence

<220>

<223> Amino acid sequence adjacent to a site cleaved by
 blood coagulation Factor Xa

<220>

<223> Amino acid sequence of helper peptide

<400> 5

Gly Cys His His His His

1

5

<210> 6

<211> 10

<212> PRT

<213> Artificial Sequence

<220>

<223> Amino acid sequence containing a chemically cleaved site

<400> 6

Pro Gly Gly Arg Pro Ser Arg His Lys Arg

1

5

10

<210> 7

<211> 10

<212> PRT

<213> Artificial Sequence

<220>

<223> Amino acid sequence of helper peptide

<400> 7

His Arg His Lys Arg Ser His His His His

1

5

10

<210> 8

<211> 5

<212> PRT

<213> Artificial Sequence

<220>

<223> Amino acid sequence containing a site cleaved by
Kex2 protease

<400> 8

Ser Asp His Lys Arg

1 5

<210> 9

<211> 23

<212> PRT

<213> Artificial Sequence

<220>

<223> Amino acid sequence of containing a position
cleaved by OmpT

<400> 9

Gln Met His Gly Tyr Asp Ala Glu Leu Arg Leu Tyr Arg Arg His His

1 5 10 15

Arg Trp Gly Arg Ser Gly Ser

20

<210> 10

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<223> Amino acid sequence containing a position cleaved
by OmpT

<400> 10

Gln Met His Gly Tyr Asp Ala Glu Leu Arg Leu Tyr Arg Arg His His
 1 5 10 15

Gly Ser Gly Ser
 20

<210> 11
 <211> 69
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Nucleotide sequence coding for an amino acid
 sequence containing a site cleaved by OmpT

<400> 11
 cag atg cat ggt tat gac gcg gag ctc cgg ctg tat cgc cgt cat cac 48
 Gln Met His Gly Tyr Asp Ala Glu Leu Arg Leu Tyr Arg Arg His His
 1 5 10 15
 cgg tgg ggt cgt tcc gga tcc 69
 Arg Trp Gly Arg Ser Gly Ser
 20

<210> 12
 <211> 23
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Amino acid sequence containing a site cleaved by
 OmpT

<400> 12
 Gln Met His Gly Tyr Asp Ala Glu Leu Arg Leu Tyr Arg Arg His His
 1 5 10 15
 Arg Trp Gly Arg Ser Gly Ser
 20

05403033-0000

<210> 13
 <211> 47
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Nucleotide sequence coding for an amino acid
 sequence containing a site cleaved by OmpT

 <400> 13
 tggttatgac gcgagactcc gcctgtatcg ccgtcatcac ggttcgg 47

 <210> 14
 <211> 55
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Nucleotide sequence coding for an amino acid
 sequence containing a site cleaved by OmpT

 <400> 14
 gatccggaac cgtgatgacg gcgatacagg cggagctccg cgtcataacc atgca 55

 <210> 15
 <211> 24
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Primer

 <400> 15
 gactcagatc ttcttgaggc cgat 24

<210> 16
<211> 36
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 16
aaaggtacct tccgcatgcc gcggatgtcg agaagg

36

<210> 17
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 17
aggccaggaa ccgtaaaaag

20

<210> 18
<211> 29
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 18
aaaatgcata gcatcgtaac cgtgcatct

29

<210> 19

<211> 627
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Nucleotide sequence coding for a fusion protein
 comprising GLP-1, helper peptide and
 β -galactosidase protective peptide

<400> 19
 cccaggcttt acactttatg cttccggctc gtatgttggtg tggaattgtg agcggataac 60
 aatttcacac aggaacacagc t atg acc atg att acg gat tca ctg gcc gtc 111
 Met Thr Met Ile Thr Asp Ser Leu Ala Val
 1 5 10
 gtt tta caa cgt aaa gac tgg gat aac cct gcc gtt acc caa ctt aat 159
 Val Leu Gln Arg Lys Asp Trp Asp Asn Pro Gly Val Thr Gln Leu Asn
 15 20 25
 cgc ctt gca gca cat ccc cct ttc gcc agc tgg cgt aat agc gac gac 207
 Arg Leu Ala Ala His Pro Pro Phe Ala Ser Trp Arg Asn Ser Asp Asp
 30 35 40
 gcc cgc acc gat cgc cct tcc caa cag ttg cgc agc ctg aat ggc gaa 255
 Ala Arg Thr Asp Arg Pro Ser Gln Gln Leu Arg Ser Leu Asn Gly Glu
 45 50 55
 tgg cgc ttt gcc tgg ttt ccg gca cca gaa gcg gtg ccg gca agc ttg 303
 Trp Arg Phe Ala Trp Phe Pro Ala Pro Glu Ala Val Pro Ala Ser Leu
 60 65 70
 ctg gag tca gat ctt cct gag gcc gat act gtc gtc gtc ccc tca aac 351
 Leu Glu Ser Asp Leu Pro Glu Ala Asp Thr Val Val Val Pro Ser Asn
 75 80 85 90
 tgg cag atg cac ggt tac gat gcg atg cat ggt tat gac gcg gag ctc 399
 Trp Gln Met His Gly Tyr Asp Ala Met His Gly Tyr Asp Ala Glu Leu
 95 100 105
 cgc ctg tat cgc cgt cat cac ggt tcc gga tcc cct tct oga cat ccg 447
 Arg Leu Tyr Arg Arg His His Gly Ser Gly Ser Pro Ser Arg His Pro
 110 115 120

Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly Gln Ala Ala Lys Glu
 130 135 140

Phe Ile Ala Trp Leu Val Lys Gly Arg Gly
 145 150

<210> 21
 <211> 187
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Amino acid sequence of a fusion protein comprising
 GLP-1, helper peptide and β -galactosidase
 protective peptide

<400> 21
 Met Thr Met Ile Thr Asp Ser Leu Ala Val Val Leu Gln Arg Lys Asp
 1 5 10 15
 Trp Asp Asn Pro Gly Val Thr Gln Leu Asn Arg Leu Ala Ala His Pro
 20 25 30
 Pro Phe Ala Ser Trp Arg Asn Ser Asp Asp Ala Arg Thr Asp Arg Pro
 35 40 45
 Ser Gln Gln Leu Arg Ser Leu Asn Gly Glu Trp Arg Phe Ala Trp Phe
 50 55 60
 Pro Ala Pro Glu Ala Val Pro Ala Ser Leu Leu Glu Ser Asp Leu Pro
 65 70 75 80
 Glu Ala Asp Thr Val Val Val Pro Ser Asn Trp Gln Met His Gly Tyr
 85 90 95
 Asp Ala Pro Ile Tyr Thr Asn Val Thr Tyr Pro Ile Thr Val Asn Pro
 100 105 110
 Pro Phe Val Pro Thr Glu Pro His His His His His Gly Gly Arg Gln
 115 120 125
 Met His Gly Tyr Asp Ala Glu Leu Arg Leu Tyr Arg Arg His His Arg
 130 135 140
 Trp Gly Arg Ser Gly Ser Pro Ser Arg His Lys Arg His Ala Glu Gly
 145 150 155 160

Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly Gln Ala Ala Lys
165 170 175

Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly
180 185

<210> 22

<211> 184

<212> PRT

<213> Artificial Sequence

<220>

<223> Amino acid sequence of a fusion protein comprising
GLP-1, helper peptide and β -galactosidase
protective peptide

<400> 22

Met Thr Met Ile Thr Asp Ser Leu Ala Val Val Leu Gln Arg Lys Asp
1 5 10 15
Trp Asp Asn Pro Gly Val Thr Gln Leu Asn Arg Leu Ala Ala His Pro
20 25 30
Pro Phe Ala Ser Trp Arg Asn Ser Asp Asp Ala Arg Thr Asp Arg Pro
35 40 45
Ser Gln Gln Leu Arg Ser Leu Asn Gly Glu Trp Arg Phe Ala Trp Phe
50 55 60
Pro Ala Pro Glu Ala Val Pro Ala Ser Leu Leu Glu Ser Asp Leu Pro
65 70 75 80
Glu Ala Asp Thr Val Val Val Pro Ser Asn Trp Gln Met His Gly Tyr
85 90 95
Asp Ala Pro Ile Tyr Thr Asn Val Thr Tyr Pro Ile Thr Val Asn Pro
100 105 110
Pro Phe Val Pro Thr Glu Pro His His His His His Gly Gly Arg Gln
115 120 125
Met His Gly Tyr Asp Ala Glu Leu Arg Leu Tyr Arg Arg His His Gly
130 135 140
Ser Gly Ser Pro Ser Arg His Lys Arg His Ala Glu Gly Thr Phe Thr
145 150 155 160

Ser Asp Val Ser Ser Tyr Leu Glu Gly Gln Ala Ala Lys Glu Phe Ile
165 170 175

Ala Trp Leu Val Lys Gly Arg Gly
180

<210> 23

<211> 184

<212> PRT

<213> Artificial Sequence

<220>

<223> Amino acid sequence of a fusion protein comprising
GLP-1, helper peptide and β -galactosidase
protective peptide

<400> 23

Met	Thr	Met	Ile	Thr	Asp	Ser	Leu	Ala	Val	Val	Leu	Gln	Arg	Lys	Asp	1	5	10	15
Trp	Asp	Asn	Pro	Gly	Val	Thr	Gln	Leu	Asn	Arg	Leu	Ala	Ala	His	Pro	20	25	30	
Pro	Phe	Ala	Ser	Trp	Arg	Asn	Ser	Asp	Asp	Ala	Arg	Thr	Asp	Arg	Pro	35	40	45	
Ser	Gln	Gln	Leu	Arg	Ser	Leu	Asn	Gly	Glu	Trp	Arg	Phe	Ala	Trp	Phe	50	55	60	
Pro	Ala	Pro	Glu	Ala	Val	Pro	Ala	Ser	Leu	Leu	Glu	Ser	Asp	Leu	Pro	65	70	75	80
Glu	Ala	Asp	Thr	Val	Val	Val	Pro	Ser	Asn	Trp	Gln	Met	His	Gly	Tyr	85	90	95	
Asp	Ala	Pro	Ile	Tyr	Thr	Asn	Val	Thr	Tyr	Pro	Ile	Thr	Val	Asn	Pro	100	105	110	
Pro	Phe	Val	Pro	Thr	Glu	Pro	His	His	His	His	His	Gly	Gly	Arg	Gln	115	120	125	
Met	His	Gly	Tyr	Asp	Ala	Glu	Leu	Arg	Leu	Tyr	Arg	Arg	His	His	Gly	130	135	140	
Ser	Gly	Ser	Pro	Ser	Arg	His	Pro	Arg	His	Ala	Glu	Gly	Thr	Phe	Thr	145	150	155	160

Ser Asp Val Ser Ser Tyr Leu Glu Gly Gln Ala Ala Lys Glu Phe Ile

165

170

175

Ala Trp Leu Val Lys Gly Arg Gly

180

<210> 24

<211> 5

<212> PRT

<213> Artificial Sequence

<220>

<223> Amino acid sequence containing a site cleaved by
Kex2 Protease

<400> 24

Ser Cys His Lys Arg

1

5